

IMPURITIES OF GAS AND IMPROVEMENT OF METERS.

On Monday evening last, at the Western Literary and Scientific Institution, in Leicester-square, Mr. Defries lectured on gas meters.

He commenced by contrasting wet and dry meters, and proceeded to shew that, in point of value, the dry meter was the best, as it was not affected by evaporation, condensation, or any change of weather. He argued, that it was a quality in gas to take up in its course any vapour or fluid with which it came in contact; and thus, when acted upon by the weather, the wet meter became, in all material points, an inefficient apparatus. It was almost needless to observe, that when gas was disturbed, a flickering or unsteadiness of the light followed. Another cause of injury to meters was the bad gas that was so extensively supplied; and while he admitted that some London companies furnished as good as could be made, he regretted, for the interests of the public, that a great deal was so strongly impregnated with ammonia and sulphuretted hydrogen, that the machinery shortly became so incrustated with the injurious matter, that not only was certainty of action out of the question, but the metres became useless, and ceased altogether to perform their registration. He would here, by way of digressing, observe, that it had long been a matter of unqualified surprise to him, that the practice so invariably pursued in Scotland had not been more generally adopted here. It was notorious, that gas was even used in the bedrooms in Scotland, and that not so much as a tallow-chandler's could be found. When, therefore, he reminded the meeting that the gas thus used was of the purest and most inoffensive character, and when he also reminded them of the great resources of British companies, and of the capability of the British public to support them, he was sure that the meeting would share in the surprise he felt, that the practice had not been more generally adopted here. Gas, independently of being the clearest and most condensed light, was unquestionably the cheapest, and, in point of trouble or inconvenience, was of no account to the consumer, when an honest company supplied good gas, and an efficient meter-maker furnished a proper apparatus. In order to establish his position as to the capability of gas taking up any fluid in its course, the lecturer shewed Lowe's naphthalized light, and contended that there was plenty of gas as good as that in use in England.

He then proceeded to describe the water meter, but he would not detail the inefficiency of it, as he considered enough had been said on that score not only by the press in general, but in the paper read by Mr. Croll at the Institution of Civil Engineers, which opened the eyes of the public to the means whereby gas could be obtained without paying for it, and the gas companies defrauded.

The lecturer then proceeded to explain the meters which had been patented during the last twenty-four years, excepting those made by Mr. Clegg and Mr. Hutchinson, for which the means had not been afforded him. And he then went on to speak of the dry meter of which he was the inventor and patentee, and urged that it was so contrived that no gas could affect it injuriously.

By an alteration in the valve in making it from a D. slide to a rotary valve, the gas passed through its proper channel without escaping to the upper part of the meter, for when the gas thus escaped amidst the machinery, corrosion inevitably followed. This improved valve, which he called his new protective rotary valve, in conjunction with an alloy of metal of which he constructed certain portions of the gearage, comprised the essential points of improvement.

The lecturer then proceeded to describe his meter as being of a circular form divided into three rhomboidal compartments and one superior chamber. Each of the three rhomboidal compartments is subdivided into two angular compartments, by a perpendicular partition formed of four metallic angular plates, united at their edges and also at the centre by a skin of leather properly prepared. The meter thus contains six chambers in the lower portion of the apparatus not communicating with each other, but all communicating through a rotary valve with the upper portion. Each of these partitions, the chamber being filled

with gas, works backwards and forwards, alternately bulging out or receding at its centre with a perpendicular shaft. The three perpendicular shafts pass through as many stuffing boxes into the superior chamber, where each shaft communicating by two rods with the axle of the common tangent of one, and transmitting to it the alternate motion of its own partition, induces by combination a rotary motion in an upright spindle. The interior compartments are the parts employed in the measurement of the gas, while the superior chamber receives the gas so measured. In the superior chamber is placed a rotary valve, the seat of which is divided into six compartments, to supply alternately the three partitions. The valve is arranged over the three pairs of measuring compartments in such a manner that the centre or interior part of the valve is alternately connected with the part on either side of the partition; and the pressure of gas entering one side of the partition discharges the contents of its fellow compartment into the common chamber above, from which the measured gas passes to the burners. Above the spindle of the tangent a perpendicular shaft is connected with a horizontal wheel, which gives the motion to the index train. An arrangement of wheels similar to those used in clock-work, registering on the drum five feet of gas, measures on the first dial 1,000 cubic feet, on the second 10,000, and on the third 100,000; while, in order to shew the nicety of completion, the meter before them indicated the sixtieth part of one-tenth of a foot.

SOCIETY OF ARTS.

DISTRIBUTION OF PRIZES.

We rejoice to find that those judicious and efficient rules and requisites pointed out by the Royal and exalted but most practical and active President of the Society of Arts for the "development and application of the principles of taste along with those of science,—for the promotion, in short, of the union of the beautiful with the useful in our arts and manufactures," as expressed in the report of its proceedings, read on Thursday last, in presence of the President himself, and of a still more numerous and brilliant assemblage than heretofore, are already giving birth to their legitimate issue in "a greatly extended sphere of practical usefulness, and a prosperity, public interest, and substantial revenue, greatly increased beyond all previous experience."

His Royal Highness, the President, after a graceful expression of his satisfaction with the result of what was thus, in truth, due to "that new direction given by himself to the labours of the Society" which he fosters, presented the numerous medals and other prizes with the most gracious kindness of demeanour, not only listening with unwearied patience to the dry details which some enthusiasts, in the merits of their own inventions, spun out to rather a tedious length, but discoursing with the various successful inventors, and inquisitively examining every thing with the least pretension to either beauty or utility.

Amongst the prizes were medals to an Italian and a Swedish inventor; and amongst the crowd of spectators, were recognised the Earl of Dartmouth, Baron Goldsmid, Sir Edward Codrington, Sir W. Ross, Sir J. Builleau, &c.

On the eve of going to press, we have not time at present further to particularize the proceedings of this interesting meeting.

BURNING OF HANWELL BRIDGE.—A subscriber writes thus:—Perhaps the following circumstance may give some clue to the cause of this disaster. It is not long since that the grass in the Green Park was separated from the gravel walk, opposite Lord Salisbury's house, by a single wooden rail, the joints of which at each post were covered with a piece of iron hooping. Going down this walk many years back, the rail suddenly burst into a flame and continued on till burnt through, when it fell on the ground. On examining the cause of apparently so strange a fire, I found the wood underneath the iron hoop was decayed, and had become touchwood, which the heat of the sun, operating on the iron, had kindled into a flame. When wood and iron are so combined, as in the bridge in question, may not the same cause have produced the same effect.

FINAL RESOLVE OF GOVERNMENT ON WELLINGTON STATUE QUESTION.

In reply to questions put by Mr. C. Berkeley, in the Commons, on the 4th inst., Lord Morpeth assured the House, that the Government have advised her Majesty to give authority for the removal of the statue from the arch; and that the Government have signified that decision to the committee. The committee replied that they did not think a sufficient portion of the scaffolding had been removed. But they now state that a sufficient portion has been removed. The Government, however, are still of opinion, that the effect is unfavourable, both for the statue and the arch, and is not such as to do credit to a memorial in honour of the Duke of Wellington. As to what are the views of the committee, and whether they have sufficient funds for the removal, his lordship professed entire ignorance. All he knows is, that they were willing to remove the statue, and that they have now intimated their intention of doing so. The artist has been requested to prepare a pedestal; a site has not been found; but as soon as the pedestal is completed, the Government will see the removal effected. Further, her Majesty has signified her pleasure that, when the House shall be pleased to vote the sum necessary for the completion of the arch, any decorations which may still have to be added, should be illustrative of the achievements of the Duke of Wellington, and should be such as may serve to mark the sense which the country entertains of his exploits and his deserts. In reply to a question by Lord J. Manners, his lordship added that if estimates of a satisfactory plan for the pedestal could be got before the close of the present session, that estimate and plan would be produced before the works were commenced.

Relative to a site for the statue, our correspondent, "A Londoner," says,—*"At the junction of the Brompton and Hammersmith roads, near the end of Sloane-street, there is a triangular clump of old houses, which, if pulled down and the cab-stand removed to a more suitable locality, would afford a very good position for 'His Grace,' besides giving the opportunity of widening the roadway, which is necessary there."*

USE OF GLASS.

SIR,—As your publication has frequently contained suggestions for using glass for many purposes to which it is not at present applied, I beg to add a few words on the subject, in the hopes of bringing it more generally into use. I think glass might be very usefully substituted for metal to form the roofs of verandas, thus obviating the darkening of the rooms, which is caused by the metal; the only proviso being that the glass for this and such like purposes must be sufficiently stout to weather another 1st of August. For coal-plates, area-gratings, or the covering of cellars, where much light is required, and the top is to be used as a yard or passage, thick, rough plate-glass might be advantageously used; also for the risers, and, in some cases, even the treads of stairs, where light is required in the basement, or to stairs underneath. For any of these purposes, if air as well as light is required, the glass might of course be perforated, as stout, rough plate-glass is very strong, and will bear a very considerable weight.

Glass has often been recommended for the purpose of conveying gas, water, and electric telegraph wires; and I am surprised that it has not come into general use for these purposes, particularly for water, as being so very cleanly, and not subject to corrosion to any extent. I think the black bottle-glass best adapted for these appliances.

Glass pipes might also be used in houses for laying on water, and gas, and for house-drains and traps, as glass is easily bent by the application of the heat of a spirit-lamp, and the green glass possesses great strength. The bottoms of sewers might also be lined with glass. Cisterns, meat safes, and shelves for larders, might be formed of this useful material with good effect. Glass tables and side-boards, wash-hand stands, sinks, taps, and even glass doors, where light is requisite, would form useful and elegant objects.

There are an immense number of purposes